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A New, Rare Victorian Subspecies of *Eucalyptus leucoxylon* F. Muell.

K. Rule

Dept. Botany, La Trobe University, Bundoora, VIC.

Abstract

Eucalyptus leucoxylon subsp. *bellarinensis*, a rare, pruinose and relatively large-fruited form of Yellow Gum occurring in coastal Central Victoria, is described and comments regarding its infraspecific affinities, distributions and conservation status are given.

Introduction

The variable nature of *Eucalyptus leucoxylon* F. Muell. is unequalled within the genus. Its complexity is a result of its extensive distribution, which extends from the Flinders Ranges to North-eastern Victoria, and the numerous habitats it occupies. Boland (1979) provided formal descriptions of four morphological and geographical forms: subsp. *leucoxylon* Boland, subsp. *megalocarpa* Boland, subsp. *pruinosa* Boland and subsp. *petiolaris* Boland. Two additional taxa were described by Rule (1991): subsp. *stephaniae* Rule and subsp. *connata* Rule. In 1992 subsp. *petiolaris* was elevated in rank to *E. petiolaris* (Boland) Rule.

Further study, however, has demonstrated that an additional morphological and geographical form of *E. leucoxylon* is sufficiently distinctive in its combination of features to warrant subspecific recognition. It occurs on the Bellarine Peninsula near Geelong in coastal Central Victoria and grows as a depauperate, often mallee-like tree with features including waxy, frequently connate juvenile leaves and relatively large fruits borne on markedly long pedicels.

Eucalyptus leucoxylon F Muell subsp. ***bellarinensis*** K Rule subsp. nov.

Eucalyptus leucoxyloni F. Muell. subsp. *connatae* K. Rule et subsp. *pruinosae* Boland affinis sed ambabo fructibus majoribus et pedicellis longioribus differt; necnon a subsp. *connata* foliis juvenilibus pruinosis, et a subsp. *pruinosa* foliis juvenilibus connatis constanter differt.

Type: Grounds of Anglican Church, Ocean Grove, *K. Rule 9688*, 4 viii 1996 (holotype MEL *2042455;* isotypes AD, NSW, CANB)

Small, umbrageous, multi-trunked *trees* to 12 m high. Bark on upper trunk and branches smooth, mottled, white with grey; bark on base and lower trunk light brown or grey-brown, fibrous, persistent as slabs and chunks, box-like in appearance. Juvenile leaves opposite and sessile for more than 25 pairs, connate for numerous pairs, cordate or broadly ovate, blue-grey, discolorous, waxy, to 9 cm long and 8 cm wide. Lightly waxy pre-adult leaves occasionally present in the canopy. Adult leaves petiolate, the petiole 1–1.5 cm long, the blade lanceolate or broadly lanceolate, 10–16 cm long, 1.5–3 cm wide, blue-green, sub-lustrous, acuminate. Inflorescences axillary, simple, 3-flowered; peduncles slender, to 2 cm long. Floral buds on pedicels 2–3 cm long, the floral bud proper globular, excluding the beak 5–7 mm long, 5–7 mm wide, unscarred, the sepaline operculum intact,

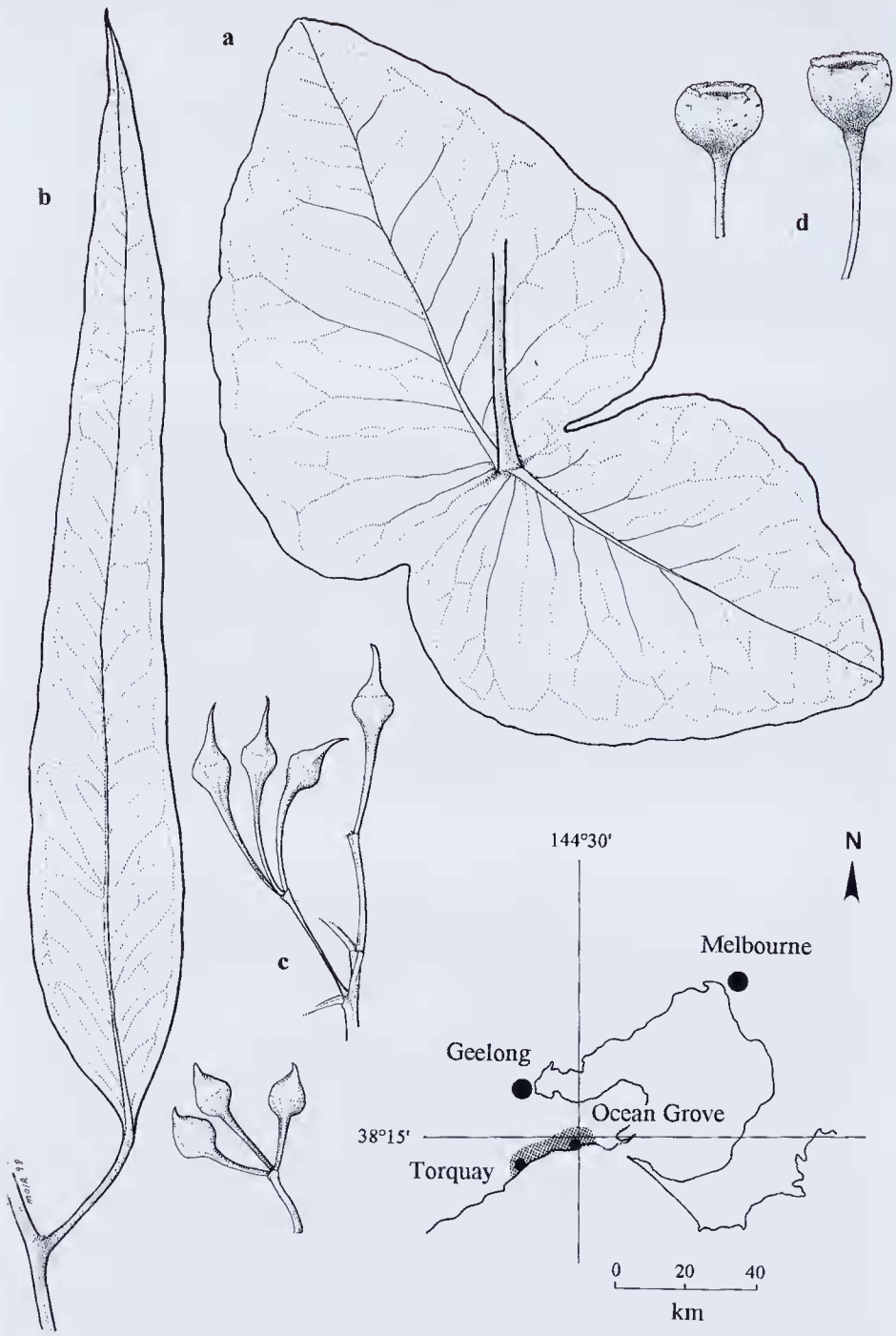

Fig. 1. ad *Eucalyptus leucoxylon* subsp. *bellarinensis* (*Rule 9688*): **a** juvenile leaf x1; **b** adult leaf x1; **c** buds x1; **d** fruit x1; distribution of *Eucalyptus leucoxylon* subsp. *bellarinensis*.

often with a conspicuous beak to 9 mm long, sometimes lightly waxy; outer whorls of stamens as staminodes; filaments white; staminophore often persisting with fruit. Fruits hemispherical, 8–10 mm long, 9–13(–14) mm wide; discs descending; valves enclosed; pedicels 15–27 mm long, occasionally swollen immediately below the hypanthium; locules 5–7. (Fig 1)

Phenology

Flowers: April and May.

Additional specimens examined:

Victoria: Sunset Strip adjacent to Bell Bvd., Jan Juc, *P. Carolan*, 14 v 1986 (MEL *684518*); North-east of Ocean Grove on Wallington Road, 300 m north of Rhinds Road, *K. Rule 9745 and M. Trengove*, 14 III 1997 (MEL); Kingston Park, Ocean Grove, *K. Rule 9746 and M. Trengove*, 14 III 1997 (MEL); Adjacent to the entrance to the Ocean Grove Nature Reserve, *K. Rule 9747 and M. Trengove*, 14 III 1997 (MEL); Deep Creek Reserve, Torquay, *K. Rule 9748 and M. Trengove*, 14 III 1997 (MEL); Spring Creek Reserve, Torquay, *K. Rule 9749 and M. Trengove*, 14 III 1997 (MEL); 300 m north of the Great. Ocean Road, Jan Juc, *K. Rule 9750 and M. Trengove*, 14 III 1997 (MEL).

Distribution and habitat

Populations of the new subspecies are known only from the Bellarine Peninsula, occurring on coastal sites close to the Southern Ocean in the vicinity of Ocean Grove and Torquay, with a small remnant population at the western end of the nearby Lake Connewarre. All sites are often blasted by cool, salt-laden winds. Its preferred soils are heavy clays which are water-logged in winter. (Fig. 1)

Scattered remnants on the western side of Jan Juc, previously included with subsp. *connata*, which have waxy juvenile leaves and fruit sizes and pedicel lengths within the range of subsp. *bellarinensis*, are now considered a part of the new subspecies.

Etymology

The subspecific name is in reference to the location of the new subspecies on the Bellarine Peninsula near Geelong in coastal Central Victoria.

Conservation status

The new subspecies now exists on outskirts of the developing townships of Ocean Grove and Torquay. Clearing for housing blocks and farms have left only remnants on farms, at roadsides and in a few small nature reserves. There is an urgent need for conservation strategies to preserve the remaining unprotected populations. In accordance with Briggs & Leigh (1989), a status of 2V is recommended.

Associated species

Eucalyptus viminalis Labill. has been observed in association with the new subspecies and *E. ovata* Labill.often occurs in the vicinity. *Eucalyptus camaldulensis* Dehnh. occurs adjacent to the Lake Connewarre population.

Discussion

Eucalyptus leucoxylon subsp. *bellarinensis* is distinctive in its combination of features which include a coastal habitat, a stocking of box-like bark, waxy connate juvenile leaves, globular buds with often prominently beaked opercula and relatively large, hemispherical fruits borne on markedly long pedicels. It is similar to subsp.

connata in having globular buds, hemispherical fruits (distinctly wider than long) and frequently connate juvenile leaves, but differs from that subspecies which has a less exposed subcoastal habitat, is smooth-barked, has a shorter-beaked operculum and generally smaller fruits borne on shorter pedicels (in subsp. connata fruits 6–9 mm long, 8–11 mm wide and pedicels 8–12 mm long).

The waxy features of subsp. *bellarinensis* also suggest a close relationship to typical subsp. *pruinosa*, but it differs from that subspecies which is smooth-barked, has generally smaller adult leaves (in subsp. *pruinosa* adult leaves to 15 cm long, 2 cm wide), smaller buds without a prominent beak (the beak, if present, up to 2 mm long), smaller fruits borne on shorter pedicels (in subsp. *pruinosa* fruits 5–7 mm long, 6–9 mm wide and pedicels 4–8 mm long). Furthermore, individuals of typical subsp. *pruinosa* exhibit a low frequency of connate pairs of juvenile leaves. In fact, Mr. C. D. Boomsma of Adelaide (pers. comm.) has noted that connation is rarely observed in the population from which the type of subsp. *pruinosa* was supposed to have been collected (near Bethany in the Barossa Valley of South Australia). Unlike the typical populations of subsp. pruinosa, in Central Victorian populations individuals exhibit a high frequency of connate pairs of juvenile leaves.

The new subspecies may be distinguished from the other subspecies of *Eucalyptus leucoxylon* by the following key:

1. Wax present on juvenile leaves and/or branchlets, buds and fruits.
2. Pedicels 15–27 mm long (1.25–2.3 times longer than fruits)...subsp. *bellarinensis*
2. Pedicels 3–8 mm long (equal to or shorter than fruit length).....subsp. *pruinosa*
1. Wax absent from all structures
3. Juvenile leaves frequently connate..... subsp. *connata*
3. Juvenile leaves never connate
4. Pedicels 3–7 mm long (shorter than fruits); dried pellicle present over the orifice of the fruit.....subsp. *stephaniae*
4. Pedicels 8–30 mm long (equal to or longer than fruits); pellicle absent
5. Fruits 12–16 mm long, 10–15 mm wide; adult leaves wider than 2.5 cm.....subsp. *megalocarpa*
5. Fruits 9-13 mm long, 7–10 mm wide; adult leaves less than 2.5 cm wide.....subsp. *leucoxylon*

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